

**Amendments to the Claims:**

The below Listing of Claims replaces all prior versions and listings of claims in the application:

Cancel claims 1-6, 7, 17.

Amend the remaining claims, as indicated below.

**Listing of Claims:**

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (Currently Amended) Apparatus, according to claim 7 12, further comprising:  
an inlet tube extending from exterior the chuck base to within the cavity, underneath the diaphragm.
9. (Currently Amended) Apparatus, according to claim 7 12, further comprising:  
a permeable substrate disposed beneath the diaphragm, between the diaphragm and a bottom surface of the cavity.
10. (Currently Amended) Apparatus, according to claim 9, wherein:  
the permeable substrate comprises such as a powdered metal plate.
11. (Currently Amended) Apparatus, according to claim 7 12, wherein:  
the diaphragm comprises a sheet of silicon rubber material.
12. (Currently Amended) Apparatus for forming solder balls on substrates comprising a chuck assembly, said chuck assembly comprising:  
a rigid, generally planar chuck base having a cavity extending into the chuck base from a top surface thereof;  
a generally planar, flexible diaphragm extending across the cavity and secured to the chuck base;

said cavity being sized and shaped to receive the diaphragm;

Apparatus, according to claim 7, further comprising:

a generally planar, flexible manifold element;

a recess, coaxial with and larger than the cavity, extending into the chuck base from the top surface thereof, said recess being sized and shaped to receive the manifold element.

13. (original) Apparatus, according to claim 12, wherein the manifold element has a top surface and a bottom surface and comprises:

a plurality of grooves extending across the top surface of the manifold element;

an opening extending from the top surface of the manifold element through to the bottom surface of the manifold element , and

the opening is aligned with an inlet orifice in the chuck base.

14. (original) Apparatus, according to claim 13, wherein:

the plurality of grooves comprise two parallel sets of intersecting grooves.

15. (original) Apparatus, according to claim 12, wherein:

the manifold element extends across the recess, and is secured to a top surface of the diaphragm.

16. (original) Apparatus, according to claim 12, wherein:

the manifold element comprises a sheet of a film material.

17. (canceled)